

THE NEOTROPICAL LACE BUGS OF THE GENUS *VATIGA*
(HETEROPTERA: TINGIDAE), PESTS OF CASSAVA:
NEW SYNONYMIES AND KEY TO SPECIES

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Abstract.—Recognition of infrapopulation variations led to a review of *Vatiga* Drake and Hambleton resulting in six new synonymies: *V. cassiae* (Drake and Hambleton) is senior synonym of *V. lonchocarpa* (Drake and Hambleton); *V. manihotae* (Drake) is senior synonym of *V. celebrata* (Drake), *V. longula* (Drake), *V. sessoris* (Drake and Hambleton), *V. variana* Drake and Hambleton, and *V. vicosana* Drake and Hambleton. *Vatiga illudens* variety *varianta* (Drake) is elevated to species status. The four *Manihot* "species" reported as host plants for *Vatiga* are here accepted as comprising but one, *M. esculenta*. A key is provided for separating the five species of *Vatiga* here recognized.

Key Words: Heteroptera, Tingidae, *Vatiga*, new synonymies, new status, hosts, key

The species of the genus *Vatiga* Drake and Hambleton exhibit a decided preference for plants of the genus *Manihot* Miller, common name cassava (Euphorbiaceae), an important human food source in the American tropics. The four "species" of *Manihot* recorded as host plants of *Vatiga* are all considered as one by Rogers and Appan (1973), that is, *Manihot esculenta* Crantz (= *M. aipi* Pohl, *M. dulcis* Pax, and *M. utilissima* Pohl). The host records listed below, however, are as given on the specimen labels in case later students decide that several plant species are actually present. *Vatiga* also has been reported from two species of Fabaceae (*Bauhinia* species, *Lonchocarpa* species); it is not yet clear if these are simply "sitting" records or actually represent successful use of those plants as true hosts.

Frequent attempts to identify specimens of the genus *Vatiga* revealed important variations in certain series of individuals bearing identical label data. The assumption that all such similarly labeled individuals are

members of a single population led to the conclusion that some species are quite variable, especially in the two sets of head spines or tubercles, the medioapical and the occipitals. In species with a single medioapical spine or short tubercle (Fig. 3), the presence is constant even though somewhat variable in length; but in species in which the medioapical armature consists of a pair of spines or tubercles, one on each side of the midline, those spines or tubercles could be elongate, blunt cylinders, be variously reduced, be absent, or lose one member of the pair and have the remaining member still occupying its position distinctly removed from the midline (Figs. 4, 5). The occipital pair, while always present, varied from blunt tubercles to elongate, blunt cylinders—the shorter form being the more common.

Recognition of this variability led to the conclusion that five of the names cataloged by Drake and Ruhoff (1965: 424-426) belong in synonymy and the subspecies deserves elevation to species rank. A key for

separating the five species here considered valid follows the species' treatments.

Confirmation of the true status of the presently recognized *Vatiga* "species" must be derived by following progeny through several generations to ascertain the amount and significance of the variation in each line. The separation of *V. cassiae* (Drake and Hambleton) from *V. manihotae* (Drake) is very weak, being based wholly on the color pattern near the apex of the hemelytron; so far no series bearing the same label data contained both forms or intermediate conditions.

Genus *Vatiga* Drake and Hambleton

Fig. 1

Vatiga Drake and Hambleton, 1946: 10. Type species: *Vatiga vicosana* Drake and Hambleton, a junior synonym of *Leptopharsa manihotae* Drake, original designation.

Members of the genus *Vatiga* are readily recognized by their slender form (Fig. 1) combined with the laminae of the mesosternum (Fig. 2) being strongly, convexly incurved toward, and sometimes actually touching each other. The individuals range in length from 3.0–3.8 mm.

Vatiga cassiae (Drake and Hambleton)

Fig. 1

Tigava cassiae Drake and Hambleton 1934: 440 [new species: Brazil].

Tigava lonchocarpa Drake and Hambleton 1944: 125 [new species: Brazil]; Drake and Ruhoff, 1965: 425. NEW SYNONYMY.

Vatiga cassiae.—Drake and Hambleton 1946: 10; Drake and Ruhoff, 1965: 424.

Recognition character: This is the only species in the genus with a subapical area of pale veins and cells in the broad dark median stripe of the membrane.

Comments: Examination of the holotypes of both "species" and several dozen other specimens found no character that would justify keeping *Vatiga lonchocarpa* as a sep-

arate species. Undoubtedly, the different host given on each of the two original lots of specimens inspired the desire to describe the second species. Interestingly, the holotypes and some of the paratypes of each "species" were collected at Viçosa, Minas Gerais, Brazil, but one year apart. Except for the color intensity, which is predictably paler in teneral individuals, and an occasional specimen with shorter occipital spines (not reaching to medioapical spine), the characters of this species appear to be more constant than those in any other member of the genus.

Published reports and all specimens examined were from the state of Minas Gerais, Brazil. Unidentified species of *Manihot* and *Lonchocarpus* are the recorded hosts of *V. cassiae*.

Vatiga illudens (Drake)

Figs. 4, 5

Leptopharsa illudens Drake 1922: 370 [new species: Puerto Rico].

Atheas pallidus Barber 1923: 6 [new species: Puerto Rico]. Synonymized under *Leptopharsa illudens* by Barber 1924: 136.

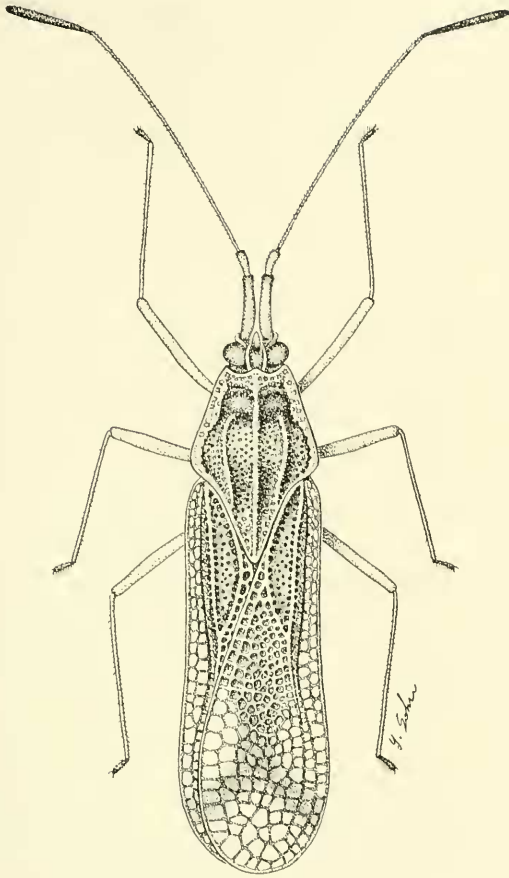
Vatiga celebrata Drake 1928: 53 [new species: Brazil]; Drake and Ruhoff 1965: 424. NEW SYNONYMY.

Vatiga illudens.—Drake and Hambleton 1946: 10; Drake and Ruhoff 1965: 424.

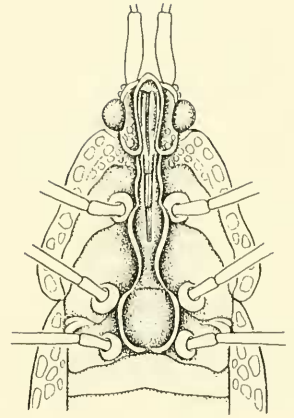
Vatiga variana Drake and Hambleton 1946: 11 [new species: Brazil]; Drake and Ruhoff 1965: 426. NEW SYNONYMY.

Recognition characters: The combination of the lack of, or presence of, a pair of medioapical tubercles on the dorsum of the head (if only a single tubercle is present it is not on the midline) coupled with the costal area being regularly biseriate from base to apex will permit recognition of this species.

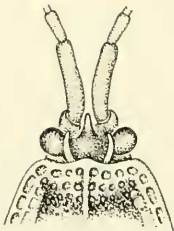
Comments: Examination of the holotypes of *V. illudens*, *V. celebrata*, and *V. variana* found no separating features. Study of series of specimens with the same data label found



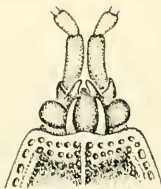
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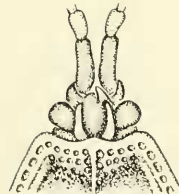
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3



4



5

Figs. 1-5. Fig. 1. *Vatiga cassiae*, dorsal view. Figs. 2-3. *Vatiga manihotae*. 2, ventral view of head and thorax. 3, dorsal view of head. Figs. 4, 5. *Vatiga illudens*. 4, dorsal view of head with both medioapical spines. 5, dorsal view of head with left spine of medioapical pair missing.

both lengths of occipital spines may occur in the same series; most often the occipital spines reach or distinctly surpass the mid-length of the eye.

Drake and Ruhoff (1965: 426) cataloged this species from the Greater Antilles (Cuba, Haiti, Dominican Republic, Jamaica, Puerto Rico), Lesser Antilles (St. Eustacius), and South America (Brazil). In addition, specimens at hand were from Colombia (Pto. Gaitlan, ex *Manihot esculenta*, Nariño, San Martín, Amazonas), Ecuador (Aqyarico, ex *M. esculenta*, Dureno), Guayana (Bartica District, Kartabo; Grove/Craig area, ex: "cassava"), Trinidad (Curepe; University W. I. field station, St. George Co.), and Venezuela (Barquisimeto, ex: *M. esculenta*; Chaguaramus, Monagas). The cataloged hosts were *Manihot dulcis*, *M. esculenta*, *M. utilissima* [all belonging together as *M. esculenta* according to Rogers and Appan 1973], and *M.* species.

Vatiga manihotae (Drake)
Figs. 2, 3

Leptopharsa manihotae Drake 1922: 371 [new species: Trinidad].

Leptopharsa longula Drake 1922: 371 [new species: Brazil]; Drake and Ruhoff 1965: 425. NEW SYNONYMY.

Tigava sesoris Drake and Hambleton 1942: 77 [new species: Brazil]; Drake and Ruhoff 1965: 426. NEW SYNONYMY.

Vatiga vicosana Drake and Hambleton 1946: 10 [new species: Brazil]; Drake and Ruhoff 1965: 426. NEW SYNONYMY.

Vatiga manihotae.—Drake and Hambleton 1946: 10; Drake and Ruhoff 1965: 425.

Recognition characters: The single, medioapical spine, or the length of antennal I being equal to the length of the head plus the collar, coupled with the absence of a pale area (including veins) subapically in the dark median stripe of the membrane will permit recognition of this species.

Comments: When Drake (1922: 371) originally described the two new species *L.*

longula and *L. manihotae* he pointed out the similarities between them and then mentioned several small points for separating them. His type series consisted, respectively, of two and three specimens. Now with many more specimens available, including several series of specimens with the same label data (indicating a possible single population), the originally itemized differences are found to be bridged by intermediates, even in the length of the occipital spines, which vary from stout and reaching the midlength of the eye to slenderly tapering and reaching the base of an antenna. Side-by-side comparisons of such series found no constant separating characters, so the names must be synonymized.

The two names proposed in 1922 were described on the same page and thus both are available for the species. The name *manihotae* is here selected to indicate the most commonly reported host plant for the members of the genus.

The name *V. sesoris* is based solely on the holotype from Brazil. None of its characters will separate it from *V. manihotae* as treated here so the synonymy is necessary. Its original description compared it with *V. cassiae*, but it lacks the presence of a pale area in the dark membranal stripe of that species.

A third name, *V. vicosana*, must also be synonymized here because the holotype, which was available for this study, falls within the variations here accepted for *V. manihotae*. As the senior synonym of *V. vicosana*, *V. manihotae* now becomes the name for the type species.

This appears to be the most widespread member of *Vatiga*; Drake and Ruhoff (1965) cataloged it [combining all records, including those for the synonyms] from Cuba, Trinidad, Brazil, Peru, Paraguay, and Argentina, with hosts given as *Bauhinia* sp., *Manihot utilissima* [now a junior synonym of *V. esculenta*], and *Manihot* species. Specimens at hand add Colombia (Palmira, Valle, ex *M. esculenta*; Pto. Nariño, San Martín, Amazonas) and Venezuela (Gua-

re, estado Portuguesa; Mt. Marahuaca, north slope; Rio Loja, Zulia).

Vatiga pauxilla (Drake and Poor)

Leptopharsa pauxilla Drake and Poor 1939: 32 [new species: Argentina].

Vatiga pauxilla.—Drake and Ruhoff 1960: 29; 1965: 426.

Recognition character: This species is unique within the genus by virtue of having a single row of cells for the full length of the costal area.

Comments: The holotype from Argentina was the only specimen available for this study. No record of a host was encountered.

Vatiga varianta (Drake), NEW STATUS

Leptopharsa illudens var. *variantis* [sic] Drake 1930: 25 [new species: Brazil].

Vatiga illudens var. *variantis* [sic].—Drake and Hambleton 1946: 10.

Vatiga illudens var. *varianta*.—Drake and Ruhoff 1965: 425.

Recognition character: In this species the costal area is mostly uniseriate with the widened area opposite the apex of the discoidal area mostly irregularly biseriate.

Comments: The holotype and more than a dozen other Brazilian specimens, all previously reported, were examined. Additional records include one from Colombia (Puerto Gaitán, Carimogoa, ex *Manihot esculenta*), and one from Brazil (Minas Gerais, ex *Manihot aipi*). Thus, the known host is *Manihot esculenta*.

KEY TO SPECIES OF *VATIGA*

- 1. Head medioapically with a single spine or prominent tubercle on midline. Antennal segment I distinctly longer than head. 2
- Head medioapically lacking armature, or with a pair of spines or tubercles, one on each side of midline, space between them may be filled with pruinosity and give the superficial appearance of a single structure (if one spine absent, the other is clearly set to one side and not on the midline of the head). Antennal segment I not longer than head 3
- 2. Hemelytron with mediolongitudinal dark area

- extending almost or quite to apex of membrane, subapically or apically forming a loop or “Y” enclosing an area wherein the veins as well as the cells are conspicuously paler (Fig. 1) *cassiae* (Drake)
- Hemelytron with mediolongitudinal dark mark not forming a loop or “Y” and hence not enclosing an area of pale veins and membrane *manihotae* (Drake)
- 3. Costal area regularly biseriate from base to apical fourth or more (occasionally with a tiny intercalary cell included) *illudens*
- Costal area not regularly biseriate to apical fourth 4
- 4. Costal area uniseriate for full length *pauxilla*
- Costal area mostly uniseriate with a short area opposite apex of discoidal area irregularly biseriate *varianta*

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